In 2013, cancer remained the second leading cause of Missouri resident deaths, behind only heart disease. Heart disease and cancer have long been the two leading causes of death, both in Missouri and nationally, by a wide margin. The Death MICA allows users to analyze cancer mortality statistics to obtain a good deal of information, including demographics of cancer decedents, recent trends in cancer mortality rates, and the leading types of cancer deaths in Missouri. (Data related to cancer incidence are available through the Cancer Registry MICA, which will be covered in a later issue of this newsletter.)

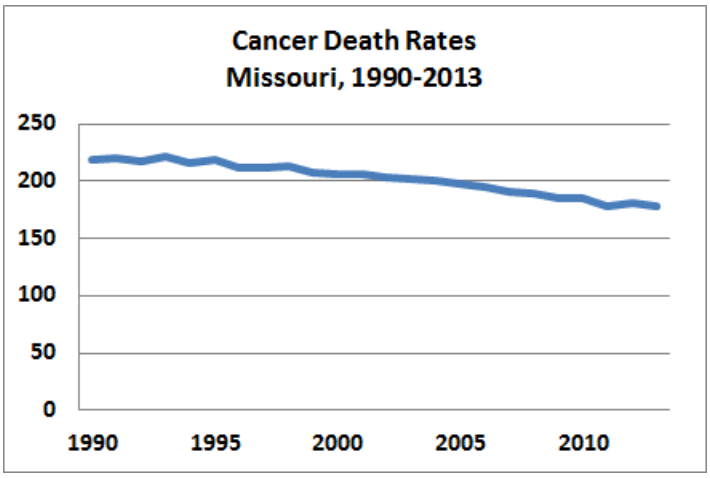
Cancer is a general name used to describe a large and complex group of diseases that share some common characteristics. Cancer begins "when cells in a part of the body start to grow out of control… [They] continue to grow and form new, abnormal cells." Cancer cells are unique because they have the ability to expand into other tissue. Rapid growth of abnormal cells and the ability to expand to other parts of the body are two common traits found in all forms of cancer.[1] Statewide, 12,902 residents died from cancer in 2013. In fact, just over 22.5 percent of all deaths in the state were attributed to this disease. The Death MICA can be used to compare cancer with other leading causes of death in Missouri.

Leading Causes of Death: Missouri, 2013

Rank	Disease	Count	Rate
1	Heart Disease	14,036	193.8
2	Cancer	12,902	178.7
3	Chronic Lower Respiratory Disease	3,800	52.9
4	Unintentional Injury	2,965	46.7
5	Stroke	2,913	40.3
	All Causes	57,256	804.9

Death rates are reported per 100,000 residents and are age adjusted to the 2000 U.S. standard population.

Cancer and other leading causes of death can also be easily tracked over time using the Death MICA, which provides mortality statistics going back to 1990. Since 1990, the clear trend has been declining death rates. This is true for cancer and heart disease as well as all causes overall (the sum of all Missouri resident deaths, regardless of the specific cause). For instance, from 1990 to 2013 the heart disease mortality rate declined a massive 41 percent. While declines in cancer death rates have not been as dramatic, the 18.3 percent cancer mortality decline is larger than the all causes decrease of 14.9 percent. The trend line on the left shows that the cancer mortality rate decline has been steady. The 2013 rate is statistically significantly lower than the rates in all years from 1990 through 2009.



Death rates are reported per 100,000 residents and are age adjusted to the 2000 U.S. standard population.

Because cancer is a collection of diseases, the causes and treatments vary greatly depending on the type of cancer. Through the MICA drill-down feature, users of the Death MICA can analyze death rates for many of the major cancer types. To access the drill-down feature, first submit a table with Cancer selected as the cause of death in Step 6 of the query screen. When the table appears, click on the Cancer label to view the drill-down categories, which use the term "malignant neoplasm" in place of "cancer." The table below shows that lung cancer is the deadliest form of cancer in Missouri; about 30 percent of all 2013 Missouri cancer deaths were due to lung cancer. Colon cancer ranked a distant second, accounting for just under 9 percent of all cancer deaths. Breast, pancreas, and leukemia round out the top five cancer types in terms of number of deaths. Although this table lists only the top 10 cancer types, 22 different cancer types are available in the Death MICA. In addition, analysts have developed a grouping labeled All other and unspecified malignant neoplasms to capture the sum total of the many more rare cancer types that cannot be shared individually due to confidentiality concerns.

Leading Types of Cancer Deaths: Missouri, 2013

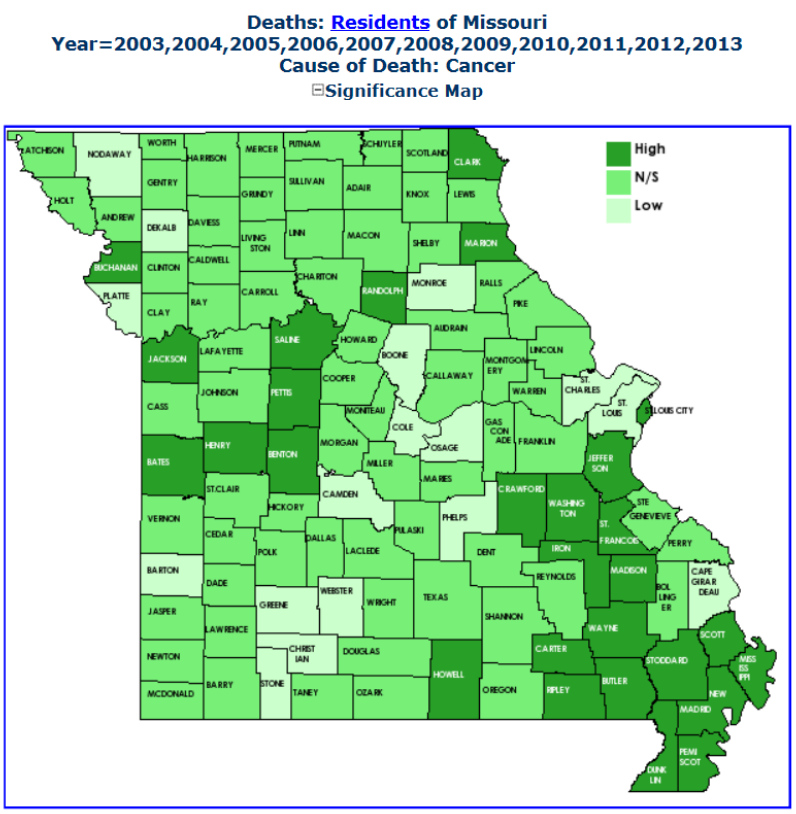
Rank	Cancer Type	Count	Rate
1	Lung	3,982	54.6
2	Colon	1,124	15.7
3	Breast	864	21.9†
4	Pancreas	784	10.9
5	Leukemia	499	7.1
6	Prostate	496	17.0‡
7	Liver	468	6.3
8	Non-Hodgkin's Lymphoma	414	5.8
9	Kidney	338	4.6
10	Esophagus	333	4.5

Death rates are reported per 100,000 residents and are age adjusted to the 2000 U.S. standard population.
†Breast cancer rate calculated using only female population
‡Prostate cancer rate calculated using only male population

For certain cancer types which predominantly or exclusively affect only one gender, users should be aware of the denominator used to calculate the rate. MICA allows users to calculate rates for all persons even when the total population is not at risk of contracting the disease (e.g., females do not develop prostate cancer). For these cancer types, the overall rate for both genders will be much lower than the gender-specific rate. For example, the 2013 prostate cancer rate for males was 17.0, while the rate for females, who are not at risk of this form of cancer, was 0. The inclusion of females in the rate calculation causes the overall rate to drop to 6.9. In situations like this, users may wish to analyze and report gender-specific rates that include only the appropriate gender in the denominator. (If this type of substitution is made, it should be noted with the rate.) Depending on the query selections, users may have to use rates from different columns or even different tables. The previous table showing cancer mortality by type includes examples of the substitution of gender-specific rates for breast and prostate cancer, as noted in the footnotes.

MICA also allows users to display spatial differences in rates or counts through the use of maps. Because of small populations in many rural Missouri counties, analysts must combine several years of data to obtain meaningful statistics when working with rare events like death. The standard practice at DHSS has been to combine 11 years of data when reporting death statistics for all 115 Missouri counties or when creating statewide maps. The map below uses cancer death rates for the 2003-2013 time period. Counties in the darkest shade of green have cancer rates that are statistically significantly high compared to the state rate. Conversely, counties shaded in the lightest green have significantly lower rates than the state. Counties in the middle shade of green have rates that are not statistically significantly different from the state rate.

The majority of the counties with significantly high cancer mortality rates compared to Missouri are located in the southeastern Bootheel corner of the state. However, there is a smaller cluster of five counties with significantly high rates that stretches from Saline in north central Missouri to Bates along the western border, and there are a few individual counties with high rates scattered throughout the state. Although St. Louis City's rate is significantly high, St. Louis County, its only adjacent Missouri county, has a significantly low rate, as does St. Charles County. Other clusters of significantly low rates are found in the Springfield area of southwest Missouri and in the Columbia-Jefferson City area of central Missouri. Cape Girardeau County is the only county in the Southeast BRFSS Region with a significantly low rate compared to the state.



References:

[1]American Cancer Society. (Last reviewed April 15, 2015). *What Is Cancer?* Accessed September 8, 2015, from http://www.cancer.org/cancer/cancerbasics/what-is-cancer.

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2014 BRFSS Key Findings Posted

The 2014 BRFSS (Behavioral Risk Factor Surveillance System) Key Findings Report has been posted at http://www.health.mo.gov/data/brfss/data.php, and 2014 prevalence statistics are available at http://www.health.mo.gov/data/brfss/index.php. The BRFSS survey collects information on health conditions, behaviors, preventive practices, and access to health care. The full 2014 BRFSS Data Report will be posted at a later date.

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New Topic Area Added to Healthy People 2020 Tracking Website

The Respiratory Diseases topic area has been added to the Healthy People 2020 – Missouri Data Resources website at http://www.health.mo.gov/data/mica/MICA/hpobjectives.html. This site provides links to topic area spreadsheets that detail sources of local Missouri data for the Healthy People 2020 objectives. For each objective, we have listed a comparable indicator from a Missouri data source, if available, along with the type of rate (1-year, 5-year, etc.) provided by the source and the geographic levels for which rates are available (state, county, city, region, etc.). The last two columns of the spreadsheet include the U.S. baseline and target rates from the Healthy People website. Users can download the table and add additional columns to incorporate their communities' data, which can be easily accessed using the hyperlinks on the Missouri Data Source labels. Additional topic areas will be added as they are completed.

We hope to post the objectives for the Injury and Violence Prevention topic area very soon. In addition, Healthy People recently updated target rates for many indicators to reflect more recent population estimates. We will incorporate those revised target rates into the topic areas already posted on our website.

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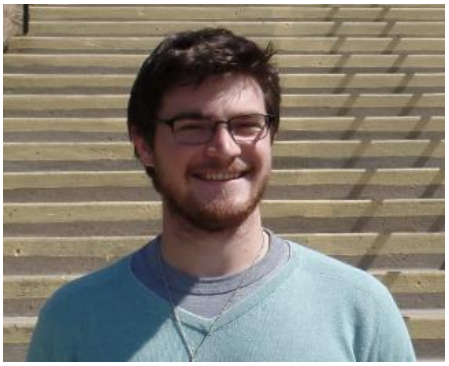
Public Health Spotlight



David Kelly is the newest member of the Bureau of Health Care Analysis and Data Dissemination (BHCADD). Some of you may remember his face from our summer MICA trainings; he presented sections of material at the Columbia, Kansas City, and Cape Girardeau sessions. A few of you may remember him sitting on your side of the lectern during the February MICA trainings in Jefferson City, where he attended the course as a new employee.

David received his undergraduate degree from Southeast Missouri State University, where he majored in Political Science and earned a minor in Spanish. He followed up by completing a Master's degree in Political Science with a focus on American politics and research methods at Michigan State University, where he used statistics to analyze political phenomena/behavior. While still a student himself, David worked as an instructor or teaching assistant in many other courses, which ranged from American government and public
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policy to research methods and statistics. All of this teaching experience proved helpful when he prepped for the MICA trainings!

David says he was attracted to his current position as a Research Analyst I because he "enjoys helping people to learn and understand statistics." (This is a fitting passion for an employee in the BHCADD!) During his months with the Bureau, David has done just that. He has worked with one of our partner organizations, the Kansas City Data Collective (KCDC), to provide statistics related to leading causes of death and maternal/child health in the Kansas City Metro Area. He also assists with WIC data, responding to the multitude of data requests the BHCADD receives, and writing and editing various reports. David's policy-oriented background gives him a unique perspective on the public health data he works with each day: "I relate many things back to how systems and institutions affect public health." Though he's only been with the Bureau a short time, David's interest has already been sparked by several different projects, especially the data requests and pieces of proposed legislation that intertwine policy with public health. In addition to training others, David himself has been busy attending trainings on topics ranging from the SAS statistical software used to prepare data for the MICA tools to evidence-based decision making to epidemiology.

David moved to Jefferson City when he accepted the Research Analyst I position. Mid-Missouri appears to be a good fit for David's leisure-time interests, which are very nature-centered. He enjoys hunting and fishing so much that he even ventured out on opening day of trout season despite the six inches of snow on the ground! He also enjoys reading, with fantasy being his favorite genre. When asked what people might be surprised to know about him, David replied, "I share a birthday with many famous people: LeBron James, Tiger Woods, Matt Lauer, and Becca Mickels—you'll remember her from MICA trainings."

We are excited to welcome David to the BHCADD team and look forward to all of you getting to work with him!

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Summer 2015 MICA Trainings and Other Adventures

The Data Dissemination Team recently wrapped up the 2015 summer MICA training season. This year we offered 11 days of training at 4 different sites across the state. Over the course of the summer, 66 people attended the 4 sessions of *Introduction to Profiles and MICA*, 56 people attended the 4 sessions of *Health Data Analysis*, and 33 people attended the 3 sessions of the *Health Data Workshop*.

The estimated miles driven to Columbia, Kansas City, Cape Girardeau, and St. Louis total 1,112. Which trainer traveled the most? Here is the breakdown:

- Andy – 1,048 miles (all trainings)
- David – 975.4 miles (Columbia, Kansas City, and Cape Girardeau)
- Becca – 769.4 miles (Columbia, Kansas City, and St. Louis)
- Whitney – 661.4 miles (Columbia and Cape Girardeau)
- Evan – 327.8 miles (Columbia and St. Louis)
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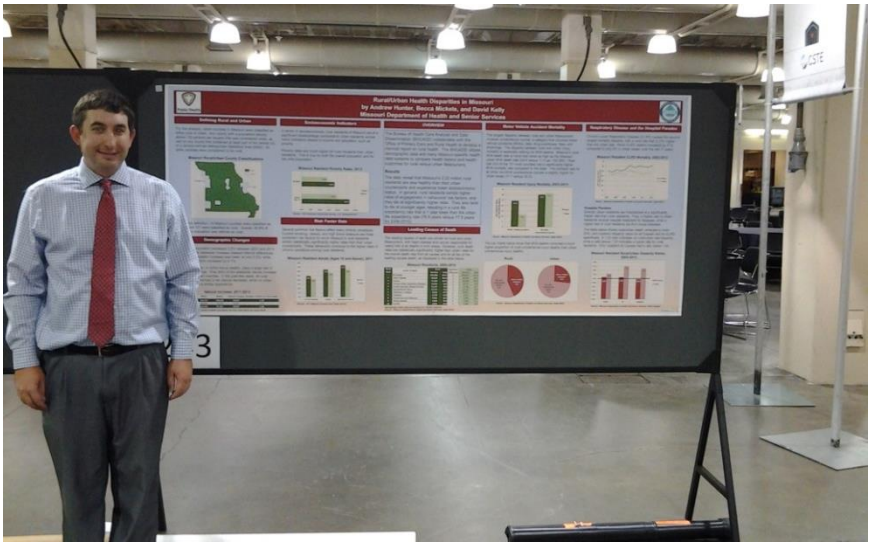
Those of you who have been reading this newsletter over the past few years may have noticed that we offered fewer MICA training sessions this year than in previous summers and therefore traveled fewer miles. However, Andy and Becca could argue that they should each add another 2,634 miles to their totals because they traveled to the Council for State and Territorial Epidemiologists (CSTE) Conference in Boston!

At the conference, Becca spoke about the development of the MICA trainings so that other states and organizations can replicate our methods.

Her presentation, titled "Behind Missouri's Health Data Trainings: The Making of Health Data Rock Stars" is available at https://cste.confex.com/cste/2015/webprogram/Session2950.html.



Andy presented a poster on "Rural and Urban Health Disparities in Missouri." The poster highlighted the key findings of the *2012-2013 Health in Rural Missouri Biennial Report* but incorporated more recent data. The poster abstract is available at https://cste.confex.com/cste/2015/webprogram/Session3222.html.

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Upcoming MICA Trainings

There are no MICA trainings currently scheduled. Any updates will be posted at http://health.mo.gov/data/mica/MICA/healthdatatraining.html.

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Data Updates

Several of the Profiles and Data MICAs have been updated since the publication of the last newsletter. They include:

Cancer Registry MICA – through 2012
Emergency Room MICA – through 2013
Fertility Rate MICA – through 2013
Hospital Discharges, Charges and Days of Care MICA – through 2013
Injury MICA – through 2013
Inpatient Hospitalization MICA – through 2013
Medicaid Records MICA – through July 2015
Pregnancy MICA – through 2014
TANF (Temporary Assistance for Needy Families) MICA – through July 2015

Death – Leading Causes Profile – through 2013
Delivery Profile – through 2013
Heart Disease Profile – mortality data updated through 2013
Hospital Revenues Profile – through 2013
Prenatal Profile – through 2013
Stroke Profile – mortality data updated through 2013
Women's Reproductive Health Profile – through 2013

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Recent/Upcoming Events

The BHCADD aims to publish this MICA newsletter quarterly; unfortunately, we are running a little behind schedule with this one, as the last issue was distributed in February. However, we think you will understand the delay when you read about all the events we have attended. We have been very busy!

Even before the summer training season started, the team offered *Introduction to Profiles and MICA* and *Health Data Analysis* at the Missouri Technical Training and Education Center (MOTEC) in Jefferson City in February. Andy and Becca provided a shorter overview of the tools to new local public health agency (LPHA) administrators in April. Andy and Whitney presented similar material to new participants in the Department's Program for Dietetic Interns in August, while Andy and Becca traveled to St. Louis later that month to speak at the Evidence-Based Decision Making course. (The BHCADD cosponsors the course with the Prevention Research Center of St. Louis, which is supported by both Washington University and the Saint Louis University College of Public Health and Social Justice).

Becca and Whitney were invited to present at the Teen Pregnancy and Prevention Partnership's annual conference, which took place on April 10 in Kirkwood. The 2015 conference theme was Complete Information – Better Choices. They took the opportunity to compare indicators related to teen births and pregnancies in the United States, in Missouri, and in four geographies within the state: St. Louis County, St. Louis City, St. Charles County, and Kansas City. They also hosted an exhibit at the conference.

The BHCADD was a new exhibitor at the 2015 Cancer Summit in Columbia this spring. The event was cosponsored by the Department's Comprehensive Cancer Control Program and the Missouri Cancer Consortium to enhance knowledge of evidence-based cancer care. Whitney and David shared information through our interactive MICA exhibit.

In July, Becca shared information on sources of injury and violence data at a meeting of the Missouri Injury and Violence Prevention Advisory Committee (MIVPAC). These included the Injury MICA and Community Data Profiles on unintentional, assault, and self-inflicted injuries, as well as national data sources.

Although most of our efforts are targeted at working public health professionals, we also enjoy several opportunities to support public health students. Each semester we provide an overview of the MICAs and Profiles for the capstone course in the Master of Public Health program at the University of Missouri – Columbia. In January we interacted with the class during a live webinar; more recently, we recorded the material for this semester's course.
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Over the past few months, we have also had the chance to promote careers in public health statistics. In March, Andy, Becca, and Whitney all traveled to Rolla to attend the Health Occupations Students of America (HOSA) competition. Andy and Becca formally presented about the MICA tools, the educational background required for potential careers in the health statistics field, and state employment in general, while Whitney answered questions at a MICA exhibit table. Becca had the opportunity to present information on the research analyst career path to Master of Public Health students from Missouri State University in Springfield during their May visit to the State Public Health Laboratory in Jefferson City.

Although our summer training season is now over, our schedule shows no sign of slowing down. If you missed us at these events but wanted to catch up or ask us some MICA-related questions in person, you will have several opportunities over the next few months. The entire team will be attending and/or exhibiting at some point over the course of the Missouri Public Health Association Conference on September 22-24 in Columbia. Whitney and Evan will be exhibiting at the Prevention Education Empowers People, or PEEPS, Conference in Sikeston on September 29, while Andy and Becca will be speaking at the Rural Health Conference on November 18 in Columbia. Please stop by our table and let us know what you think of the newsletter!

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Q&A

How do I create my own age-adjusted rates?

In the last MICA newsletter, we explained how to calculate crude rates using ZIP Code MICAs and population estimates from the Census Bureau. In that example, we calculated an age-specific hospitalization rate for residents ages 20 to 24 years in ZIP Code 63301. Crude rates are appropriate for age-specific groups and can also be appropriate when measuring the burden of a certain type of event within a single geography.

However, when looking at a population that contains all ages and comparing that population to others or to itself over time, age-adjusted rates are more appropriate. Many health conditions strongly correlate to age. As age increases, hospitalizations and death become more likely. Age distributions can vary wildly between different geographies, races, or genders. This means that
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two groups could have very different rates for a certain health outcome simply due to differences in age distribution and not because one group is actually healthier than the other. Age adjusting "removes the differences in the age composition of two or more populations to allow comparison between these populations independent of their age structure."[1] In other words, age adjusting corrects for any rate differences that may be based only on differences in age composition. This ensures that a fair comparison can be made.

NOTE: If a large range of ages is included in an age-specific group, age adjusting may be appropriate even though an age range has been specified. For example, if the specified age range is 18-64, age adjusting would be appropriate because health status is likely to be very different for adults at the opposite ends of that range due to the age difference.

Most MICAs show age-adjusted rates for all ages by default. The age-adjusting calculation is performed in the background, so users do not have to worry about calculating age-adjusted rates themselves. However, in some instances, such as the ZIP Code MICA example in the previous newsletter, users may find themselves needing to calculate age-adjusted rates that are not available in the MICA system. In order to assist with this need, the BHCADD has created an age-adjusting worksheet to make calculating age-adjusted rates easier.

Where can I find the age-adjusting worksheet?

A link to the age-adjusting worksheet is available in the third group of links on the Data, Surveillance Systems & Statistical Reports website at http://www.health.mo.gov/data/index.php. (This website can also be reached by clicking on the Data and Statistics tab from the DHSS home page.)

What standard population does the age-adjusting worksheet use?

The age-adjusting worksheet uses the 2000 standard population proportions. In other words, the workbook adjusts a geography's actual rates to those that would have existed if the geography's age distribution matched that of the U.S. population in 2000. The 2000 standard population is the U.S. federal standard for age adjusting and thus is the most commonly used standard population. Older documents created before the 2000 U.S. Census used a different standard population, usually the 1940 or 1970 standard population. The proportions in the age-adjusting worksheet could be changed to reflect the proportions for one of these older standard populations if needed so that more recent data could be compared to older reports. The proportions for all three standard populations (1940, 1970, and 2000) are available at http://health.mo.gov/data/mica/CDP_MICA/AARate.html.

What data do I need in order to use the age-adjusting worksheet?

The worksheet is designed to be used with any MICA data source that uses population as the denominator for calculating rates. (Some MICA datasets do not use population as the denominator. For example, the denominator for the Birth MICA is total live births, which is an age-specific group. In addition, the live birth denominators are already loaded into the Birth

MICA ZIP Code datasets, allowing rates to be calculated within the tool. Therefore, it is not necessary to use the age-adjusting worksheet for Birth MICA data.)

Three important data pieces are needed in order to use the worksheet: 1) numerator data, 2) a constant, and 3) population data for the denominator.

1) Numerator data will be the number of events by age group from any of the MICA datasets other than Population MICA and those that do not use population as the denominator (such as Birth MICA). The numbers of events by age group must be placed in the appropriate cells on the age-adjusting worksheet. The age-adjusting worksheet uses 11 age groups. Most of the MICAs, however, contain 14 age groups under the drill-down hyperlink for All Ages. The worksheet was designed to accommodate those 14 age groups so that users simply need to drill down to all ages, download the table, and copy and paste the counts into the worksheet.

   One important caveat is that the Death MICA ZIP Code datasets report only the 11 age groups used in the age-adjusting calculation, not the 14 groups that are found in all other MICAs. The worksheet contains footnotes explaining this situation and alerting users of the appropriate cells to use for the Death MICA ZIP Code data.

2) Constants vary between different MICAs. It is important to make sure the appropriate constant is used if comparisons will be made to the MICA data. Constants are reported as a footnote on MICA tables.

3) If population estimates from a source other than Population MICA are used, age groups will need to be grouped to match the age-adjusting worksheet. In the rate calculation example in the previous newsletter, American FactFinder table QT-P1 was used to find population estimates by age group for ZIP Code 63301. However, that example was only concerned with the estimate for residents ages 20 to 24 years. Further examination reveals that QT-P1 uses the grouping "Under 5 years," not the separate groupings of "Under 1" and "1 to 4" required by the age-adjusting worksheet.

Geography: ZCTA5 63301

1 - 41 of 41

Age	Number			Percent			Males per 100 females
	Both sexes	Male	Female	Both sexes	Male	Female	
Total population	48,514	23,886	24,628	100.0	100.0	100.0	97.0
Under 5 years	2,748	1,440	1,308	5.7	6.0	5.3	110.1
5 to 9 years	2,482	1,209	1,273	5.1	5.1	5.2	95.0
10 to 14 years	2,552	1,339	1,213	5.3	5.6	4.9	110.4
15 to 19 years	3,769	1,887	1,882	7.8	7.9	7.6	100.3
20 to 24 years	5,024	2,634	2,390	10.4	11.0	9.7	110.2

However, FactFinder table QT-P2, titled "Single Years of Age and Sex" provides "Under 1 year." Because this table provides the population estimate for each individual age, categories can be summed to match the age-adjusting worksheet groupings. For example, ages 1-4 years can be summed to obtain the next number required by the worksheet. While this can be a tedious process, it must be completed only once to generate the population estimates, which can then be used as the denominators for most of the other MICA datasets.

Below is a section of the QT-P2 table for ZCTA 63301.

Geography: ZCTA5 63301

1 - 124 of 124

Age	Number			Percent			Males per 100 females
	Both sexes	Male	Female	Both sexes	Male	Female	
Total population (all ages)	48,514	23,886	24,628	100.0	100.0	100.0	97.0
Under 5 years	2,748	1,440	1,308	5.7	6.0	5.3	110.1
Under 1 year	581	298	283	1.2	1.2	1.1	105.3
1 year	563	318	245	1.2	1.3	1.0	129.8
2 years	557	284	273	1.1	1.2	1.1	104.0
3 years	523	271	252	1.1	1.1	1.0	107.5
4 years	524	269	255	1.1	1.1	1.0	105.5
5 to 9 years	2,482	1,209	1,273	5.1	5.1	5.2	95.0
5 years	499	234	265	1.0	1.0	1.1	88.3
6 years	509	241	268	1.0	1.0	1.1	89.9
7 years	471	232	239	1.0	1.0	1.0	97.1
8 years	506	252	254	1.0	1.1	1.0	99.2
9 years	497	250	247	1.0	1.0	1.0	101.2
10 to 14 years	2,552	1,339	1,213	5.3	5.6	4.9	110.4
10 years	506	263	243	1.0	1.1	1.0	108.2
11 years	530	291	239	1.1	1.2	1.0	121.8
12 years	512	284	228	1.1	1.2	0.9	124.6
13 years	485	235	250	1.0	1.0	1.0	94.0
14 years	519	266	253	1.1	1.1	1.0	105.1

Let's use this population data to calculate an age-adjusted inpatient hospitalization rate for all ages in the 63301 ZIP Code.

1) We must gather the number of discharges from the Inpatient Hospitalization MICA Any ZIP table. We query the 2010 hospitalization data to correspond with the 2010 population data we just obtained from American FactFinder.

   Step 1: Age
   Step 2: Year
   Step 3: Default selections
   Step 4: 63301
   Step 5: 2010
   Step 6: All Diagnoses
   Step 7: Frequencies Only
   Drill down on All Ages

   We can now download this table into Excel and copy and paste the number of discharges into the tan cells on the age-adjusting worksheet.

Inpatient Hospitalization Discharges: Residents of ZIP code(s) 63301

Diagnosis: = All diagnoses

Age of Patient	Year 2010 Number of Discharges
Under 1	60
1 to 4	63
5 to 9	42
10 to 14	78
15 to 17	95
18 to 19	132
20 to 24	282
25 to 34	745
35 to 44	548
45 to 54	848
55 to 64	897
65 to 74	1,112
75 to 84	1,068
85 and over	614
All ages	6,584
Rotate	Download

2) The next step requires changing the constant, which is located in cell B18 and shaded in green, from 100,000 to 10,000, as 10,000 is the constant used in the Inpatient Hospitalization MICA.

3) Now we must sum the appropriate age groups from FactFinder to match the categories that are used in the age-adjusting worksheet.

The correct numbers for this example are shown below. After all of the data have been entered into the worksheet, the age-adjusted rate will be located in cell F16, which is highlighted in orange and enclosed in a thick border. The completed worksheet for this example appears below.

	A	B	C	D	E	F
1	**Age**	**Numerator**	**Population (Denominator)**	**Crude Rate**	**2000 Standard Proportion**	**Age-Adjusted Rate**
2	Under 1	60	581	1032.7022	0.013818	14.26987952
3	1 to 4	63	2,167	290.7245	0.055317	16.08200738
4	5 to 9†	42	2,482	238.37902	0.145565	34.69964243
5	10 to 14†	78	2,552			
6	15 to 17‡	95	1,597	578.86956	0.138646	80.25794837
7	18 to 19‡	132	2,172			
8	20 to 24‡	282	5,024			
9	25 to 34	745	6,555	1136.537	0.135573	154.08373
10	35 to 44	548	5,378	1018.9662	0.162613	165.6971439
11	45 to 54	848	6,982	1214.5517	0.134834	163.7628645
12	55 to 64	897	5,666	1583.1274	0.087247	138.1231186
13	65 to 74	1,112	3,899	2852.0133	0.066037	188.3384047
14	75 to 84	1,068	2,470	4323.8866	0.044842	193.8917247
15	85 and over	614	989	6208.2912	0.015508	96.27817998
16	All Ages	6,584	48,514	**1357.134**	1	**1,245.5**
17						
18	Constant	10,000				
19						
20						
21	†/‡Most MICAs contain 14 age groups under the drill-down hyperlink on All Ages. The age-adjusting calculation only uses 11 age groups.					
22	This worksheet automatically combines the MICA age groups into the appropriate categories for the age-adjusting calculation.					
23	† 5 to 9 and 10 to 14 are combined into 5 to 14 in the age-adjusted formula.					
24	‡ 15 to 17, 18 to 19, and 20 to 24 are combined into 15 to 24 in the age-adjusted formula.					
25	However, the Death MICA ZIP Code datasets use only 11 age groups. If using this worksheet to age adjust data from the Death MICA ZIP Code datasets:					
26	† Put the 5 to 14 value in the 5 to 9 cell. Leave the 10 to 14 cell blank.					
27	‡ Put the 15 to 24 value in the 15 to 17 cell. Leave the 18 to 19 and 20 to 24 cells blank.					

Note that the age-adjusted rate of 1,245.5 per 10,000 is lower than the crude rate of 1,357.1 per 10,000, which can be found in cell D16. We can use the Inpatient Hospitalization MICA to find that St. Charles County's age-adjusted rate for 2010 was 1,201.3 per 10,000. The 63301 ZIP Code, which falls within St. Charles County, has a slightly higher hospitalization rate than the overall county.

References:

[1] Florida Department of Health. (n.d.). *FloridaCHARTS User's Guide: Empowering Communities with Health Information.* Retrieved April 10, 2014, from FloridaCHARTS site: http://www.floridacharts.com/Charts/documents/CHARTS_USER_GUIDE_8_2012.pdf

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Practice Exercise

Many of you have asked for additional exercises such as the one below so that you can practice the skills you learned at the MICA trainings. If you would like to check your work, a link to the answer key is provided at the bottom of this section.

A coworker's recent nasty fall and resulting broken arm inspired you to think about ways your employer, the Shannon County Health Department, can combat injuries due to falls. You decide to use the Injury MICA and the Unintentional Injury Profile to gather some preliminary data so you can understand the overall severity of the problem and the recent trends in your county, as well as the groups most at risk of falls.

1. Using the Injury MICA, select Unintentional as the Intention on Step 3. Then compare overall fall injury rates to the rates for all other injury mechanisms during the most recent year. (HINT: Select Mechanism as the row variable in Step 1. In Step 6, highlight all of the categories in the Mechanism box by using the CTRL key.)
   What is the fall injury rate? _____
   How does the fall injury rate compare to the rates for the other injury mechanisms?
   _____

2. Return to the Injury MICA query screen and change the column variable in Step 2 to Age. Which age group has the highest unintentional fall injury rate? _____

3. Return to the query screen again and add 95% confidence intervals to the table. Is the rate for this age group significantly high compared to the other age groups? _____

4. Use the Unintentional Injury Profile to look at fall deaths, hospitalizations, and emergency room visits in a single table. Are the Shannon County rates significantly different from the state rates in each of these categories?
   Deaths: _____
   Hospitalizations: _____
   Emergency Room Visits: _____
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5. Use the Trend Line feature to determine if the fall hospitalization and emergency room visit rates are changing significantly over time.
   Hospitalizations: _____
   Emergency Room Visits: _____

Visit http://health.mo.gov/data/mica/MICA/solutions.html to check the solution.

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Final Thoughts

Becca had two comments about this photo of Andy Hunter and Evan Mobley. It was taken outside of the BJC @ The Commons building following the St. Louis MICA trainings in August.

1. "Evan, you are taking that career advice about dressing for the job you want a little too seriously."
2. "They should really get some engineers out here to check on that building over there. It looks a little unstable … You know, because it has the @ symbol on the top? Like an unstable rate in MICA? Come on, guys, that was FUNNY!"
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About the MICA User Group Newsletter

The MICA User Group Newsletter was created in response to user requests for communication on updates to the MICA system, descriptions of new features, additional practice exercises, announcements of training opportunities, and any other new information about data that might help them perform their jobs more efficiently.

Newsletters will be published on a quarterly basis. If you have ideas for content, please send them to Andrew.Hunter@health.mo.gov or Becca.Mickels@health.mo.gov. We would especially like to feature stories describing your success at completing projects or obtaining grants using the MICA tools as well as interviews with public health professionals about your duties and how you use MICA to accomplish them.

Past issues are available at http://health.mo.gov/data/mica/MICA/newsletters.html.

Contributors:
Andy Hunter, Becca Mickels, Whitney Coffey, Evan Mobley, and David Kelly

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How to Sign Up or Opt Out

If you have enjoyed this newsletter, please feel free to share it with your colleagues and community partners. We encourage them to sign up for the MICA User Group by sending an e-mail to Andrew.Hunter@health.mo.gov or Becca.Mickels@health.mo.gov with the subject line MICA User Group. This will let us know to send newsletters to them directly so they do not miss any information. Also, we may occasionally distribute time-sensitive information on topics such as training opportunities via e-mail if the newsletter is not scheduled for publication prior to a registration deadline. Finally, the MICA User Group list helps us track the types of organizations using the tools, which is one of our performance measures.

If you would like to opt out of the MICA User Group, please send an e-mail with Unsubscribe in the subject line to Becca.Mickels@health.mo.gov. PLEASE NOTE: Depending on your position title, you may still receive other types of e-mail messages from us. For example, we are requested to send training information to all LPHA Administrators, even if they have unsubscribed from the MICA User Group.

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